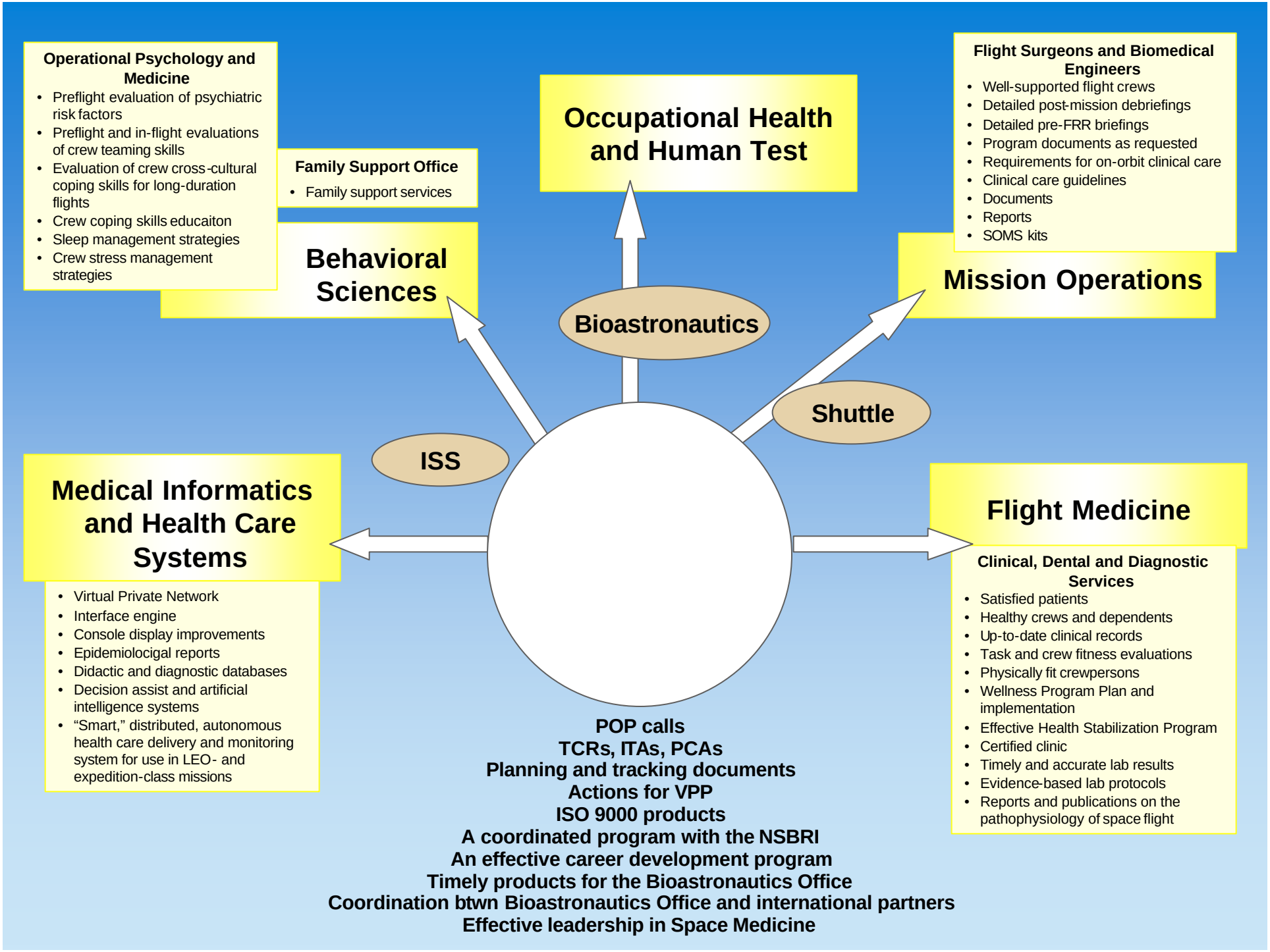
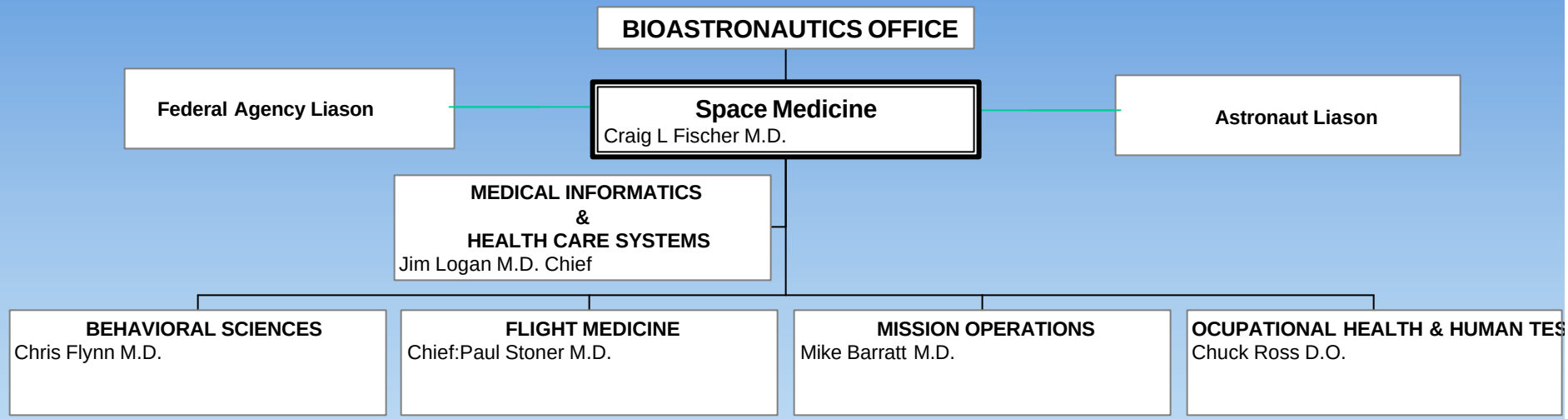
00-PPMI-120

Bioastronautics Office

Space Medicine Program

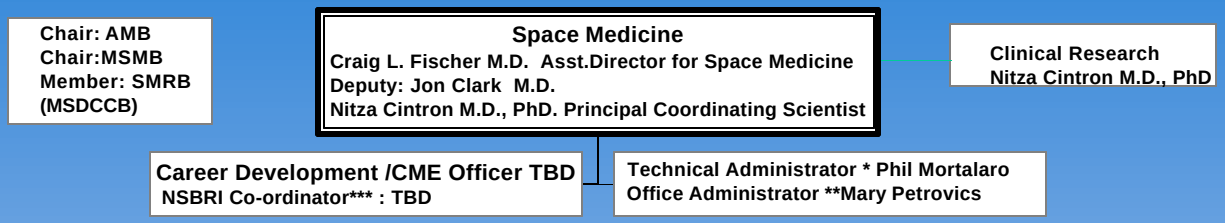

Operational Psychology and Medicine
• Preflight evaluation of psychiatric risk factors
• Preflight and in-flight evaluations of crew teaming skills
• Evaluation of crew cross-cultural coping skills for long-duration flights
• Crew coping skills educaiton
• Sleep management strategies
• Crew stress management strategies
Family Support Office
• Family support services
Behavioral Sciences
Occupational Health and Human Test
Flight Surgeons and Biomedical Engineers
• Well-supported flight crews
• Detailed post-mission debriefings
• Detailed pre-FRR briefings
• Program documents as requested
• Requirements for on-orbit clinical care
• Clinical care guidelines
• Documents
• Reports
• SOMS kits
Mission Operations
Bioastronautics
Shuttle
ISS
Medical Informatics and Health Care Systems
• Virtual Private Network
• Interface engine
• Console display improvements
• Epidemiolocigal reports
• Didactic and diagnostic databases
• Decision assist and artificial intelligence systems
• "Smart," distributed, autonomous health care delivery and monitoring system for use in LEO- and expedition-class missions
Flight Medicine
Clinical, Dental and Diagnostic Services
• Satisfied patients
• Healthy crews and dependents
• Up-to-date clinical records
• Task and crew fitness evaluations
• Physically fit crewpersons
• Wellness Program Plan and implementation
• Effective Health Stabilization Program
• Certified clinic
• Timely and accurate lab results
• Evidence-based lab protocols
• Reports and publications on the pathophysiology of space flight
POP calls
TCRs, ITAs, PCAs
Planning and tracking documents
Actions for VPP
ISO 9000 products
A coordinated program with the NSBRI
An effective career development program
Timely products for the Bioastronautics Office
Coordination btwn Bioastronautics Office and international partners
Effective leadership in Space Medicine

Reorganization



Main Organization

Space Medicine



RESPONSIBLE FOR:
-Overall Management of Space Medicine Program
-Budget & Budget Performance
-Performance Metrics*
-Work Flow Monitoring*
-JSC Program Support (Inspections, Open House, etc.)**
-Safety Issues,VPP**
-Facility Management**
-ISO-9000 Issues*
-NSBRI Coordination for Space Medicine***
-Space Medicine Review Board(MSDCCB)
-Aerospace Medicine Board
-Membership on the Multinational Space Medical Board
-Designing, Implimenting and Tracking
a Career Development Program
-Response to Action Items assigned by Bioastronautics Office

DELIVERABLES:
-POP Calls
-TCR's,ITA's, PCA's
-Planning and Tracking Documents
-Actions for VPP
-Iso 9000 Products
-A Co-ordinated Program with the NSBRI
-An Effective Career Development Program
-Timely Producs for the Bioastronautics Office
-Coordination between Bioastronautics Office and the International Partners
-EFFECTIVE LEADERSHIP IN SPACE MEDICINE

Note: The Principal Co-Ordinating Scientist will be dual assigned to both the Clinical Research Program,
of the Research and Countermeasures Office and the Space Medicine Office

Note: The Asst. Director for Space Medicine will be the Chair of the Aerospace Medicine Board and the Bioastronautics representative to the Multi-National Medical Policy Board.

Main Organization

Medical Informatics and Health Care Systems

MEDICAL INFORMATICS
&
HEALTH CARE SYSTEMS
Chief:Jim Logan M.D.

WBS TRACE: 3.8 & 3.9 + Augmentation

MEDICAL INFORMATICS
Chief Information Officer: Pat McGuinis M.D.
IPA & Expert Consultant : Jack Smith M.D. PhD
MITAC Liason : TBD

RESPONSIBLE FOR:
-Co-Ordinating With all Elements of Bioastronautics
CMIS
-Clinical Research Data Base
-Clinic (Acute Care) Data Base
-Aeromedical Data Base
-Longitudinal Study of Astronaut Health
-Coordinate with Archival Data Base
- Development of Didactic & Diagnostic Data Bases
-Selection of Artificial Intellegence Concepts
-Mission Support (Communication & Data Distribution)
-Data Display Concepts Based on Cognitive Theory
-Medical Data Security

DELIVERABLES:
-Virtual Private Network (Local, Regional & International Use)
-Interface Engine
-Console Display Improvements Based on Cognitive Theory
-Epidemiologic Reports
-Didactic & Diagnostic Data Bases
-Decision Assist & Artificial intellegence systems

SPACE HEALTH CARE DELIVERY & MONITORING SYSTEM
Project Lead: Tom Marshburn M.D.
Technology Lead: Don Stillwell

RESPONSIBLE FOR:
-Cordinating with all elements of Bioastronautics-
-Sensor Selection, Acquisition & Integration (Conjoint Effort with NASA-AMES ,JPL, NSBRI-Johns Hopkins Advanced Physics Laboratory, DOD & MITAC)
-Integration of Data Bases (Didactic & Diagnostic)
-Integration of Decision Assist & Artificial Intellegence Systems
-Developent of Integrated Space Health Care Delivery and Monitoring System Prototypes
-Coordinate with the Mission Integration & planning group for Flight Hardware Fabrication
-Support Mission Analogs with Appropriate Health Care Systems
-Integration of Advanced Concept & Nanotechnology
-On Orbit Training & Proficiency Maintainence Concepts (Virtual Reality etc.)
-ISS Hypobaric Chamber Project
-Dessemination of NASA Technology for Public Use

DELIVERABLES:
A "Smart", Distributed, Autonamous Health Care Delivrey & Monitoring System with Trainingy & Proficience Maintainence Capabilities for use in LEO & Expidition Class Missions.

Main Organization

Behavioral Sciences

BEHAVIORAL SCIENCES
Lead: Chris Flynn M.D.

WBS TRACE: 3.7

OPERATIONAL BEHAVIORAL MEDICINE
Chris Flynn M.D.

RESPONSIBLE FOR:
-Evaluation of Crew Performance
-Annual Physical Examinations
-ASCAN Selection Screening Evaluations
-Clinical Care of Astronauts Pre-Flight, In Flight & Post Flight
-Operational Circadian & Sleep Management
-Observation of Crew Cross Cultural Coping Skills
-Maintainance of Sleep Data Base
-Clinical Care of Astronaut Dependants
-Represention to the. Behavioral Medicine sectgion of the MMOP
-Maintainance of Behavioral Health Data Base
-Human-System Interface Program

DELIVERABLES:
-Pre-Flight Evaluation of Psychiatric Risk Factors
-Pre-Flight & In-Flight Evaluations of Crew Teaming Skills
-Evaluation of Crew Cross Cultural Coping Skills for Long Duration Flyers
-Crew Coping Skills Education
-Sleep Management Stratagies
-Crew Stress Management Stratagies

OPERATIONAL PSYCHOLOGY
Al Holland PhD

RESPONSIBLE FOR:
-Implimentation of Select In & Select out Stratagies
-Flight Psychological Support Program
-Representation to the U.S. Operational Psychology Program of the MMOP
-Work Load & Habitability Issues
-Cognitive Baseline Evaluations
-Psychologic Support for Flight Crew Dependant

DELIVERABLES:
-Pre-Flight & In-Flight Evaluation of Work Load & Habitabillity Concerns
-Development of a Data Base Relating to Cognitive Function
-Evaluation of Crew Adaptation to Space Flight

BEHAVIORAL HEALTH RESEARCH PROGRAM
NSBRI Lead: TBD

RESPONSIBLE FOR:
-Chronobiology Research
-Select In Stratagy
-Select Out Stratagy
-Psychological Adaptation Program

DELIVERABLES:
-Recommandations for circadian shifting protocols & sleep management
-Evidence Based Select in/Select Out Criteria
-Psychological Adaptation Plan

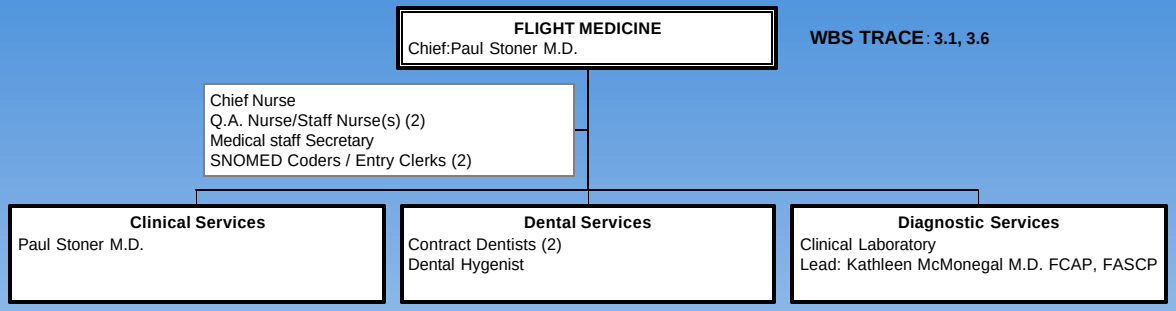
FAMILY SUPPORT OFFICE
Lead: TBD

RESPONSIBLE FOR:

DELIVERABLES:

Main Organization

Flight Medicine



RESPONSIBLE FOR:
-Physician Credentialing
-Medical Care of Astronauts & their Dependants
-Medical Care of AOD Pilots
-Wellness & Rehabilitation Program
-Preparation of Medical Records for CMIS Imput
-Medical Care of International Crew as Required
-Health Stabilization Program
-Medical Screening of ASCANS
-Quality Assurance
-Physician Crdentialing
-Preparation of Clinic for Certification

DELIVERABLES
-Satisfied Patients
-Healthy Crews and Dependants
-Up to Date Clinical Records
-Task Evaluations (ie: EVA) & General Evaluatiion of Crew Fitness
-Physically Fit Crewpersons (Pre & Post Flight)
-Wellness Program Plan & Implimentation
-Effective Health Stabilization Program
-**Certified Clinic**

RESPONSIBLE FOR:
-Dental Care of Astronauts & their Dependants
-Dental Car of AOD Pilots
-Dental Care of International Crews as Required
-Dental Screening of ASCANS
-Quality Assurance

DELIVERABLES:
-Satisfied Patients
-Healthy Crewpersons (Pre & Post Flight)

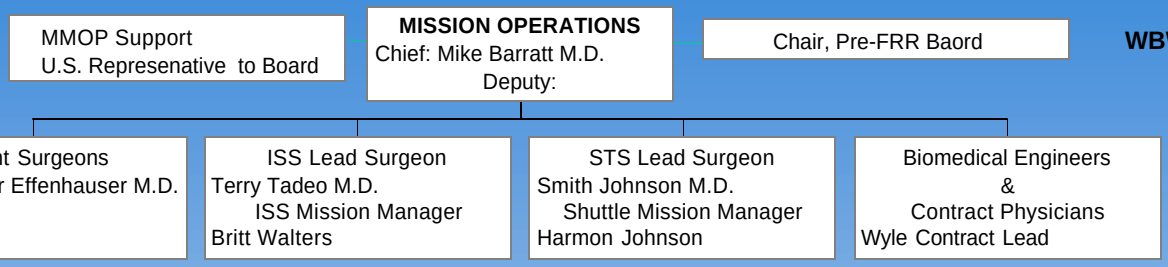
RESPONSIBLE FOR:
-Recommandations on Appropriate Use of Laboratory Tests
-Clinical Laboratory Testing of Astronauts & Their Dependants
-Clinical Laboratory Testing Of AOD Pilots
-Clinical Laboratory Testing Of ASCANS
-Interpretation Of Clinical Laboratory Data, Current and Historical
-Consultative Service to the Space Medicine Program
-Developmant & adaptation of New Technology for Future Use on Orbit

DELIVERABLES
-Timely & Accurate Laboratory Results
-Evidence Based Laboratory Protocols
-Reports and Publications on the Pathophysiology of Space Flight

Main Organization

Note: All Flight Physicals will be performed by a Mission Operations Flight Surgeon

Mission Operations



WBW TRACE: 3.2, 3.3, 3.4

RESPONSIBLE FOR:
-Imputs to the MMOP
-Establishing Medical Care Guidlines
-Establishing Evidence Based Medical Requirements for the Space Health Care & Monitoring System
-Medical Support for All Shuttle & ISS Missions
-Medical Support for Analog Missions
-Provide Expert Medical Imput to the IPT's, MIT's, FRR's, SORRR's , MMT's etc.
-Training (Crews, Residents, Flight Controllers,BME's etc.)
-AMERD, MOIP, JMOI, etc.
-Flight Rule Recommandations
-Contingency Planning & Support

DELIVERABLES
-Well Supported Flight Crews
-Detailed Post Mission Debriefings
-Detailed Pre FRR Briefings
-Program Documents as Requested
-Requirements for On-Orbit Clinical Care
-Clinical Care Guidlines

RESPONSIBLE FOR:
-Chair- ISS MIT
-Attend Mission Related Meetings
-Brief Chief, Mission Ops. on Issues
-Mission Support (ISS)
-Analog Mission Support
-Bioastronautics Program Support

DELIVERABLES:
-Documentation
-Briefings
-Recommandations to Mission Ops.

RESPONSIBLE FOR:
-Chair- Suttle MIT
-Attend Mission Related Meetings
-Brief Chief, Mission Ops. on issues
-Mission Support (Shuttle)
-Analog Mission Support
-Bioastronautics Program Support

DELIVERABLES:
-Documentation
-Briefings
-Recommandations to Mission Ops.

RESPONSIBLE FOR:
-Attend Assigned Meetings
-Mission Support
- Engineering & Technical support
-Training

DELIVERABLES
-Documents
-Reports

Main Organization

Occupational Health and Human Test

OCCUPATIONAL HEALTH & HUMAN TEST
Chief: Chuck Ross D.O.

JSC Occupational Health Officer	Human Test Support	International Health Support
Lead:Sean Keprta B.S., M.S. K-S Support	Lead: Chuck La Pinta M.D. K-S Support	Lead: Beth Hall B.S., M.S. K-S Support
RESPONSIBLE FOR:	**RESPONSIBLE FOR:** **-KC- 135 Medical Support** **-Thermal Vacuum Chambers** **-Hypobaric & Hyperbaric Chambers** **-Crash Cart Committee Interface** **-Test Readiness Reviews** **-Neutral Buoyancy Lab.** **-Physiological Training** **-AED Training**	**RESPONSIBLE FOR** **-Health Care Issues In Russia** **-Other International Health Care Issues** **-Employee Assistance Program** **-JSC Employee Health & Fitness Program** **-HR Issues**
Deliverables:	**DELIVERABLES:**	**DELIVERABLES:**

Main Organization

Note: Assigned Flight Surgeons will be responsible for monitoring there crewpersons at the NBL, KC-135 Flights and Chamber runs.